

**SSVEO IFA List****Date:**02/27/2003**STS - 100, OV - 105, Endeavour ( 16 )****Time:**03:44:PM

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<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>		<u>Subsystem</u>
MER - 1	<b>MET:</b> 000:10:00	Problem	<b>FIAR</b>	<b>IFA</b> STS-100-V-01	Active Thermal Control
EECOM-01	<b>GMT:</b> 110:04:41		<b>SPR</b> 100RF01	<b>UA</b>	Subsytem
			<b>IPR</b> 108V-0004	<b>PR</b>	<b>Manager:</b> Son Nguyen 714-372-5058 <b>Engineer:</b> Carmelo Asuncion 281-853-1635

**Title:** FES Starboard Feedline Zone 3 Heater System 1 Failed Off (ORB)

**Summary:** As of 110:07:41 G.m.t. (000:13:00 MET), the flash evaporator system (FES) starboard feedline zone 3 temperature (V63T1875A) had dropped to about 53 ?F. The zone was operating on the system 1 heater which has a thermostat set-point of 68.9 ?F. Note that as indicated by the measurement, the heater typically cycles on in the 67 to 70 ?F range. It's not believed that the heater cycled since launch (note that temperature increases are observed in the zone when the FES is used). The system 2 heater was enabled at 110:12:01 G.m.t.(000:17:20 MET) and is operating nominally. Options for the loss of a system 2 heater on the feedline have been identified. There was no mission impact.

KSC will troubleshoot and repair. A deviation to the OMI will be written to activate the system 2 heater for ferry flight.

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<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>		<u>Subsystem</u>
MER - 3	<b>MET:</b> 000:20:00	Problem	<b>FIAR</b>	<b>IFA</b> STS-100-V-02	RMS
RMS-01	<b>GMT:</b> 110:14:41		<b>SPR</b>	<b>UA</b>	<b>Manager:</b> George Glenn 281-483-1516 <b>Engineer:</b> Glenn Jorgensen 281-226-5214
			<b>IPR</b> 108V-0006	<b>PR</b>	

**Title:** RMS RHC Capture/Release Switch Sticky (RMS)

**Summary:** During the EE portion of the RMS checkout at 110:14:41 G.m.t (000:20:00 MET), the RHC capture/release switch appeared to stick while the EE snares were commanded closed in manual EE mode. This resulted in an extended stall period for the EE motor. The crew cycled the RHC capture/release switch and the condition cleared. The switch and the EE were subsequently retested and operated nominally. The crew noted that the switch did have a sticky feel. Only the EE auto mode is expected to be used. Thermal analyses shows that the temperature increase in the motor windings was not sufficient to impact EE operations for this mission.

Postflight troubleshooting will be required. This problem will not impact Ferry operations.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>	
MER - 6	<b>MET:</b> 000:22:40	Problem	<b>FIAR</b>	<b>IFA</b> STS-100-V-03	Hydraulics
MMACS-02	<b>GMT:</b> 110:17:21		<b>SPR</b> 100RF02	<b>UA</b>	<b>Manager:</b> Shahram
			<b>IPR</b> 108V-0009	<b>PR</b>	Namvari
					714-934-0523
					<b>Engineer:</b> Jeff Goza
					281-853-1612

**Title:** WSB 3 Anomalous Temperature Response When Operating on Controller B (ORB)

**Summary:** The WSBs were configured to the B controllers at 110:17:21 G.m.t. (000:22:40 MET). After that time, the WSB 3 core, water tank, and GN2 tank temperatures gradually increased. Initially it was believed that the boiler core and water tank heaters, which turn on and off together as a function of the boiler temperature feedback to the WSB controller, had failed on. It is now believed that the response could have been caused by the GN2 shutoff valve or the hydraulic bypass valve being continuously powered while on the B controller. A partial heater failure is still considered to be a possible cause of the anomaly. At 113:22:18 G.m.t. (004:03:37 MET), the WSB 3 A controller was selected and system temperatures returned to nominal values.

A plan was developed for the management of the system for the remainder of the mission. WSB 3 remained on the A controller (there was no constraint to continuous operation of the WSB feedline heater). Also, since a failure of the GN2 shutoff valve or hydraulic bypass valve could not be ruled out, APU 3 was started at TAEM during entry. In the event of an additional APU/hydraulic system failure, APU 3 could have been started as-early-as Mach 18 with a failed closed GN2 shutoff valve. Note that WSB 3 spray cooling began post touchdown. A KSC troubleshooting plan has been developed. It will consist of instrumenting WSB components with temperature sensors and powering the B controller. The B controller (likely source of failure) will be replaced. The GN2 shutoff valve, hydraulic bypass valve, water tank heaters, and core heaters will be instrumented and monitored to determine the source of the heat.. Inspection/testing of the water spray valve that is heated by the feedline heater when on the A controller, is also planned. For ferry flight, the A controller will be powered.

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<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>		<u>Subsystem</u>
MER - 15	<b>MET:</b> 009:22:09	Problem	<b>FIAR</b>	<b>IFA</b> STS-100-V-04	OMS/RCS
PROP-01	<b>GMT:</b> 119:16:50		<b>SPR</b> 100RF07	<b>UA</b>	<b>Manager:</b> Brian Werner
			<b>IPR</b>	<b>PR</b>	714-934-0542
					<b>Engineer:</b> Steve Arrieta
					281-853-1554

**Title:** Vernier Thruster R5D Low Chamber Pressure (ORB)

**Summary:** After the Orbiter assumed attitude control in preparation for undocking, vernier thruster R5D exhibited three consecutive pulses with a chamber pressure (Pc) of about 50 psia beginning at 120:16:50 G.m.t. (009:22:09 MET). The low Pc continued throughout the fly-around, separation and continues to be present during each firing of that thruster. RM did not deselect the thruster since the low-level limit for RM deselection is 26 psia. A thorough review of the data indicates low Pc during firings of R5D earlier in the mission. During longer-duration firings and periods of frequent firing, the Pc gradually increases to the nominal range. The observed Pc signature is indicative of combustion byproducts blocking the Pc sense tube, a condition that has been seen in past missions. To avoid a possible fail-off of the thruster that would result in waking the crew, the Orbiter was configured for attitude control using the primary thrusters during crew sleep. A return to vernier operations was performed at the start of FCS checkout.

KSC will perform visual inspection of the thruster per nominal checkout procedures. Replacement of the thruster is likely. This problem will not impact Ferry operations.

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